COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF BUFFALO TRAIL WATER ASSOCIATION FOR A CERTIFICATE OF APPROVAL FOR CONSTRUCTION OF A WATER LINE EXTENSION	))))	CASE NO. 10183

O R D E R

IT IS ORDERED that Buffalo Trail Water Association ("Buffalo Trail") shall file an original and seven copies of the following information with the Commission with a copy to all parties of record no later than April 15, 1988. If the information cannot be provided by this date, Buffalo Trail should submit a motion for an extension of time stating the reason a delay is necessary and include a date by which it will be furnished. Such motion will be considered by the Commission. Buffalo Trail shall furnish with each response the name of the witness who will be available at the public hearing for responding to questions concerning each item of information requested.

1. Buffalo Trail did not file any hydraulic analyses for the existing water distribution system with its application. Based on this, provide hydraulic analyses, supported by computations and actual field measurements, of typical operational sequences of the existing water distribution system. These hydraulic analyses should demonstrate the operation of any pump stations and the "empty-fill" cycle of any water storage tanks.

Computations are to be documented by a labeled schematic map of the system that shows pipeline sizes, lengths, connections, pumps, water storage tanks, wells, and sea level elevations of key points, as well as allocations of actual customer demands. Flows used in the analyses shall be identified as to whether they are based on average instantaneous flows, peak instantaneous flows, or any combination or variation thereof. The flows used in the analyses shall be documented by actual field measurements and customer use records. Justify fully any assumptions used in the analyses. (Note - these analyses should use the same schematic as the analyses of the proposed water distribution system to facilitate comparison).

2. Provide a summary of any operational deficiencies of the existing water system that are indicated by the hydraulic analyses or that are known from experience.

3. Buffalo Trail filed hydraulic analyses for the proposed water distribution system with its application. However, these analyses only depicted the operation of the proposed line extension and did not depict the operation of the complete water distribution system after completion of the proposed construction. Based on this, provide hydraulic analyses, supported by computations and actual field measurements, of typical operational sequences of the proposed water distribution system. These hydraulic analyses should demonstrate the operation of any pump stations and the "empty-fill" cycle of any water storage tanks as well as residual pressures at representative points throughout the system. Computations are to be documented by a labeled schematic

map of the system that shows pipeline sizes, lengths, connections, pumps, water storage tanks, wells, and sea level elevations of key points, as well as allocations of actual customer demands. Flows used in the analyses shall be identified as to whether they are based on average instantaneous flows, peak instantaneous flows, or any combination or variation thereof. The flows used in the analyses shall be documented by actual field measurements and customer use records. Justify fully any assumptions used in the analyses. (Note - these analyses should use the same schematic as the analyses of the existing water distribution system to facilitate comparison).

4. In order to obtain realistic results when utilizing computer hydraulic analyses to predict a water distribution system's performance, engineering references stress the importance of calibrating the results predicted to actual hydraulic conditions. This calibration process should include matching field measurements to the results predicted by the computer over a wide range of actual operating conditions. As a minimum this should include average and maximum water consumption periods, as well as "fire flow" or very high demand periods.

Based on the above, if computer hydraulic analyses are filed in response to Items 1 and 2 explain the procedures used to verify the computer hydraulic analyses filed in this case. This explanation should be documented by field measurements, hydraulic calculations, etc.

5. Most engineering references state that instantaneous customer demands can peak at 3 to 15 times the 24-hour average

demand. In addition, most engineering references also state that a water distribution system should be designed to meet at least the maximum hourly demand of its customers.

Based on the above information state exactly what measurements were made of Buffalo Trail's maximum hourly usage. If the maximum hourly usage was not measured directly, state why it was not.

In addition, state how the customer demands and demand patterns used in the hydraulic analyses of Buffalo Trail's system were determined. This response should be documented by appropriate field measurements.

6. Provide a pressure recording chart showing the actual 24-hour continuously measured pressure available at the locations listed below on Buffalo Trail's system. Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder. Also state the schematic junction number nearest the location of the pressure recorder.

a. The connection point to Mt. Olivet's water distribution system.

b. On Highway 62 in the vicinity of the connection point of the proposed water line.

7. Provide a copy of the approval of the proposed construction by the Division of Water.

8. Provide a detailed breakdown of the proposed financing. As a minimum this should include the source of funds, amount, interest rate and payback period of any loans, etc.

9. The hydraulic analyses filed in this case for the proposed water line extension indicate that the potential exists for the system to experience extremely low pressure (less than 30 psig) at several points. Pressures at this level are in violation of PSC regulation 807 KAR 5:066, Section 6 (1). Provide details of any preventive measures or additional construction Buffalo Trail intends to perform to protect against this type of occurrence. Details should be documented by hydraulic analyses and field measurements.

Done at Frankfort, Kentucky, this 21st day of March, 1988.

PUBLIC SERVICE COMMISSION

Richard D. Heman Jr.
For the Commission

ATTEST:

Executive Director